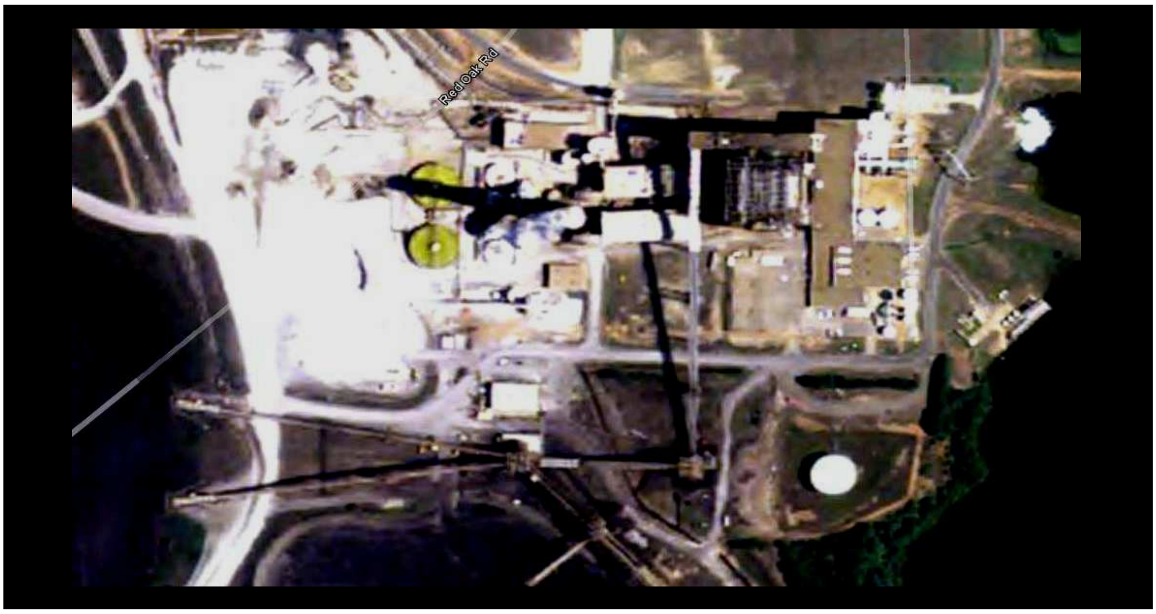
DRAFT
Field Observations Report
H.W. Pirkey Power Plant
Longview, Texas
August 24 – August 28, 2009

Prepared for:

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue
Washington, DC 20460



November 2009

Science Applications International Corporation (SAIC)
12100 Sunset Hills Road
Reston, VA 20190

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Submitted

November 16, 2009

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TABLE OF CONTENTS

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Facility Name:	Southwestern Electric Power Company (SWEPCO) – H.W. Pirkey Power Plant - the parent company is American Power Company, Inc. (AEP)
Pirkey Plant Address:	2400 FM 3251 Hallsville, TX 75650
Plant Owner:	American Electric Power (AEP)
Owner Address:	1 Riverside Plaza Columbus, OH 43215
Dates of Inspection/Sampling:	August 24 - August 28, 2009
Inspectors:	Eva Steele, EPA Region 6 (Lead) David Long, EPA Region 6 Craig Haas, EPA HQ Joe Zollo, SAIC Jim Rawe, SAIC Tiffany Richardson, SAIC
Point of Contact:	Kelly Spencer, Environmental & Industrial Hygiene Support

1.0 Introduction

The Waste & Chemical Enforcement Division (WCED), Office of Civil Enforcement, in conjunction with the Office of Compliance and EPA Regions, has initiated an exploratory effort to investigate the extent to which companies in a variety of sectors may have engaged in the illegal disposal of hazardous waste in surface impoundments. This effort is consistent with WCED's goal to target and develop enforcement actions under the Resource Conservation and Recovery Act (RCRA), the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), against persons engaged in significant non-compliance that substantially affects human health or the environment. WCED needs to gather and assess information related to surface impoundments; target facilities with surface impoundments based on risk and other factors; inspect and investigate activities at targeted facilities; develop enforcement actions as appropriate; and assess the data and other information gathered through these efforts.

2.0 Background

2.1 Purpose

EPA inspected the H.W. Pirkey coal-fired power plant (Pirkey Plant) the week of August 23, 2009 to determine compliance with applicable RCRA, Clean Water Act (CWA), EPCRA and other statutes. The investigation focused on determining what types of wastes are generated, how the wastes are managed, and how the wastes are disposed of. Science Applications International Corporation (SAIC) was tasked with assisting in the investigation by providing technical support for EPA. SAIC was also tasked to collect water and soil samples at each of the sites. These samples were analyzed for compliance with RCRA, CWA, and other relevant statutes. This report summarizes the activities performed by SAIC in support of EPA. Information in this report is based on interviews with AEP personnel, site observations, and review of documents provided by AEP. Other sources of information are noted where applicable.

2.2 Site and Process Description

The Pirkey Plant is located in Hallsville, Texas in Harrison County approximately 140 miles east of Dallas, Texas. Figure 2-1 is an overhead photo of the plant site. The station can generate approximately 675 megawatts (MW) utilizing local lignite coal. The lignite coal has a low BTU value, averaging approximately 6600 BTU per pound of coal.

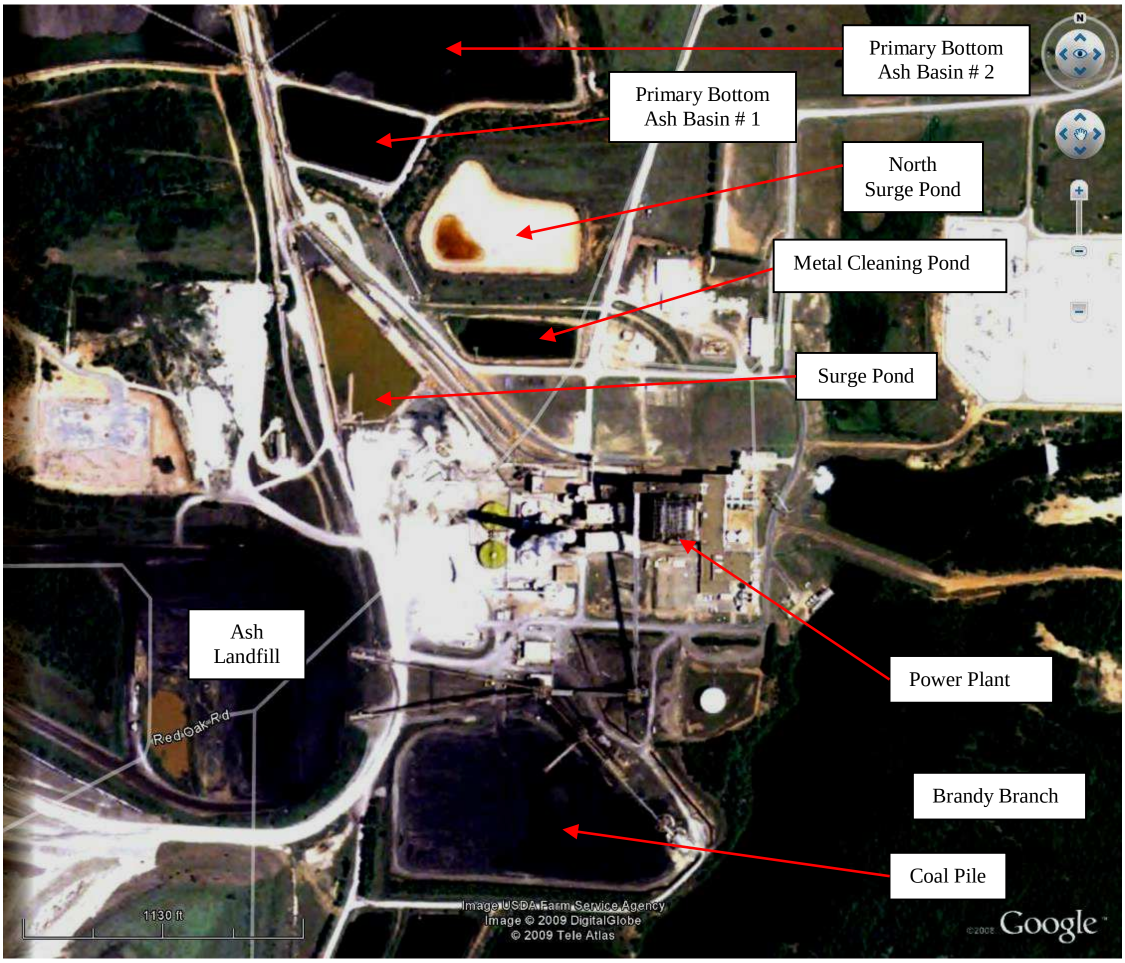

Figure 2-1. Overhead Photo of Pirkey Plant

2.3 Major Raw Materials and Waste Streams

The Pirkey Plant utilizes coal, natural gas, limestone, and boiler chemicals in the process of generating electricity. Coal and natural gas fuel the boilers. Water in tubes on the outside of the boiler (waterside) exchanges heat from the fireside and boils to form steam. Steam propels turbine blades used to generate electricity. Exhaust gases exit via stacks after treatment to remove heat, particulates, nitrous oxides (NOx), and sulfur dioxide (SO_2). The water cycle is further discussed in Section 6.3. Particulate removal results in waste fly ash

Table 2-1. Pirkey Major Raw Materials Used

Raw Material	2008 Usage *	Units	Purpose
Coal	3,877,961	Tons	Boiler fuel
Fuel Oil	9.345	Gallons	Boiler fuel
Natural Gas	5,411,504	CF	Boiler fuel
Limestone	46,834	Tons	Flue gas desulfurization
Ammonia	7,646,827	Lbs	NOx removal from stack gases
Hydrated Lime	Not known	Lbs	Wastewater treatment
Lubricating Oil	Not known	Gallons	Equipment lubrication

* Annual usage for 2008 base on TRI data provided to EPA/SAIC inspectors.

Table 2-2. Pirkey Major Waste Streams

Waste Stream	2008 Disposal	Units	Disposition
Bottom Ash	Unknown	NA	On-site disposal
Fly Ash *	227,786	Tons	Off-site and on-site disposal
Pyrite	Unknown	NA	On-site disposal
Boiler Slag	Unknown	NA	On-site disposal

* 59, 012 off-site; 168,774 on-site.

3.0 <u>Daily Activities</u>

3.1 Sunday, August 23rd – Project Kickoff Meeting

Sunday August 23, 2009 was a travel day for the inspection team. The Science Applications International Corporation (SAIC) team of Joe Zollo, Jim Rawe, and Tiffany Richardson met with Eva Steele and David Long of the Environmental Protection Agency (EPA) Region 6 on Sunday evening. A brief meeting was held to discuss an agenda for the inspections and sampling during the week.

3.2 Monday, August 24th – Process Overview and Document Review

On Monday morning, August 24th, the entire EPA/SAIC inspection team departed for the Pirkey Plant. The inspection team arrived at the Pirkey Plant at 9:00 AM. Kelly Spencer, Environmental and Industrial Hygiene Support, was the AEP point of contact for the inspection team. The inspection team met AEP representatives in a conference room in the administrative building. Introductions were made between the EPA/SAIC inspection team and the Pirkey Plant representatives. Ms. Steele stated the intention of the inspection, presented her credentials, and began the opening conference. After the opening conference, Mr. Spencer provided the inspection team with detailed background and process information on both the Pirkey Plant. The EPA inspection team then requested specific documents and records for review.

After a lunch break, the Pirkey Plant representatives provided the inspection team with a short safety briefing before going out on a plant tour. The inspection team put on the required safety equipment and proceeded to the top of the building for a plant overview. The overview lasted approximately one hour after which the inspection team reviewed files, requested additional information, and briefed the Pirkey Plant representatives on plant areas that needed to be inspected the following day.

3.3 Tuesday, August 25th – Process Overview and Document Review

On Tuesday August 25th, Craig Haas, EPA Headquarters, arrived and restated the purpose of the inspections. The EPA/SAIC inspection team broke into three groups for inspections. Ms. Steele requested a tour of RCRA satellite accumulation points (SAPs) and hazardous waste accumulation areas. Ms Steele was accompanied by Ms. Richardson. Mr. Zollo and Mr. Rawe were accompanied by Pirkey Plant personnel on an inspection of chemical and oil storage areas including tanks, totes, and drum storage. Mr. Long remained in the conference room to review paperwork and await a site inspection of the wastewater treatment areas and outfalls in the afternoon. Details of these inspections are provided in the individual regulatory sections of the report. The EPA/SAIC inspection left the site at 4:00 PM.

3.4 Wednesday, August 26th – Document Review and Sampling

On Wednesday morning, August 26th, the EPA/SAIC inspection team arrived on site at 9:00 AM. The team discussed sampling locations with the Pirkey Plant personnel. At 2:00 PM, the EPA inspection team began preparations for sampling. The first sample was collected at 2:30 PM and the last sample for the day was collected at 3:20 PM. Details of sampling locations are provided in Section 4.0 of this report.

3.5 Thursday, August 27th – Sampling

On Thursday morning, August 27th, the EPA/SAIC inspection team collected the remaining samples. The first sample was collected at 8:56 AM and the last sample for the day was collected at 10:00 AM. The samples were then packaged and shipped. Details of sampling locations are provided in Section 4.0 of this report.

4.0 Sampling Activities and Field Observations

4.1 Background on Bevill Wastes

EPA is investigating the waste disposal practices at coal-fired power plants as they relate to the Bevill exclusion. The Bevill exclusion exempts from hazardous waste regulation independently managed large-volume wastes generated at coal-fired electric utilities that use coal as the primary fuel feed in their operations. These large-volume wastes are:

- fly ash waste
- bottom ash waste
- slag waste and
- flue gas emission control waste.

Other wastes from the combustion of coal or other fossil fuels are also Bevill exempt from regulation under RCRA subtitle C. These include:

- coal combustion wastes generated at non-utilities
- coal combustion waste from fluidized bed combustion technology

- petroleum coke combustion wastes
- waste from the combustion of mixtures of coal and other fuels
- wastes from the combustion of oil and
- wastes from the combustion of natural gas.

Finally, large-volume coal combustion wastes generated at electric utilities and independent power producing facilities that are co-managed with other coal combustion wastes are exempt. Common low-volume wastes fall into two categories: uniquely associated and non-uniquely associated wastes. Common uniquely associated wastes are:

- coal pile runoff
- coal mill rejects such as pyrite and off-specification coal
- wastes from the cleaning of the exterior surfaces of heat exchangers
- floor and yard drains including wash water and stormwater
- wastewater treatment sludges and
- boiler fireside (inside of boiler tubes) chemical cleaning wastes.

If these low-volume, uniquely associated wastes are not co-managed with large-volume fossil fuel combustion wastes, they may be subject to regulation as non-exempt hazardous wastes if they are listed or exhibit a hazardous characteristic.

Low-volume wastes that typically are non-uniquely associated wastes and are not exempt are:

- boiler blowdown
- cooling tower blowdown and sludge
- intake and makeup water treatment and regeneration wastes
- boiler waterside cleaning wastes
- lab wastes
- construction and demolition debris
- general maintenance wastes and
- spills and leaks of process materials that generate non-uniquely associated wastes.

In particular, EPA is interested in the disposal of non-uniquely associated wastes with Bevill excluded wastes, and SAIC sampling focused on sources potentially meeting these parameters.

4.2 Sample Collection Overview

Samples were collected from the Pirkey Plant on Wednesday, August 26th (Section 4.3) and Thursday, August 27th, 2009 (Section 4.4). Table 4-1 describes type and location of sludge/sediment samples as well as the number and type of sample containers filled for each sample. Table 4-2 describes type and location of wastewater samples and the number and type of sample containers filled for each sample. Figure 4-1 is a copy of a site water flow diagram with sample locations identified.

Table 4-1. Sludge/Sediment Sampling Locations and Number and Type of Sample Containers Used

Sample ID	Sample Location	Volatiles	Ignitability/ Reactivity/ pH	SVOC/ PCB	TCLP	Metals
		4-oz Wide Mouth Glass (1)	**4-oz Wide Mouth Glass (1)**	**4-oz Wide Mouth Glass (1)**	**16-oz Wide Mouth Glass (2)**	**4-oz Wide Mouth Glass (1)**
PI-S-1	Pirkey Power Plant Ecology Sump (Oil-Water Separator Sludge) – inlet end	X	X	X	X	X
PI-S-2	Pirkey Power Plant Ecology Sump (Oil-Water Separator Sludge) – middle section	X	X	X	X	X

Table 4-2. Wastewater Sampling Locations and Number and Type of Containers Used

Sample ID	Sample Location	Volatiles	Ignitability	SVOC/ PCB	TCLP	Reactivity	Metals	TCLP
		40-ml VOA (2)	**4-oz Glass (1)**	**1 L Amber (2)**	**1 L Amber (3)**	**300-ml Plastic (1)**	**300-ml Plastic w/ HNO3 (1)**	**40-ml VOA (2)**
PI-W-1	Boiler Blowdown	--	--	--	X	X	X	X
PI-W-2	Ecology Pit Wastewater – Discharge End	X	--	X	X	X	X	X
PI-W-3	Ecology Pit Wastewater – Discharge End (Field Duplicate)	X	--	X	X	X	X	X

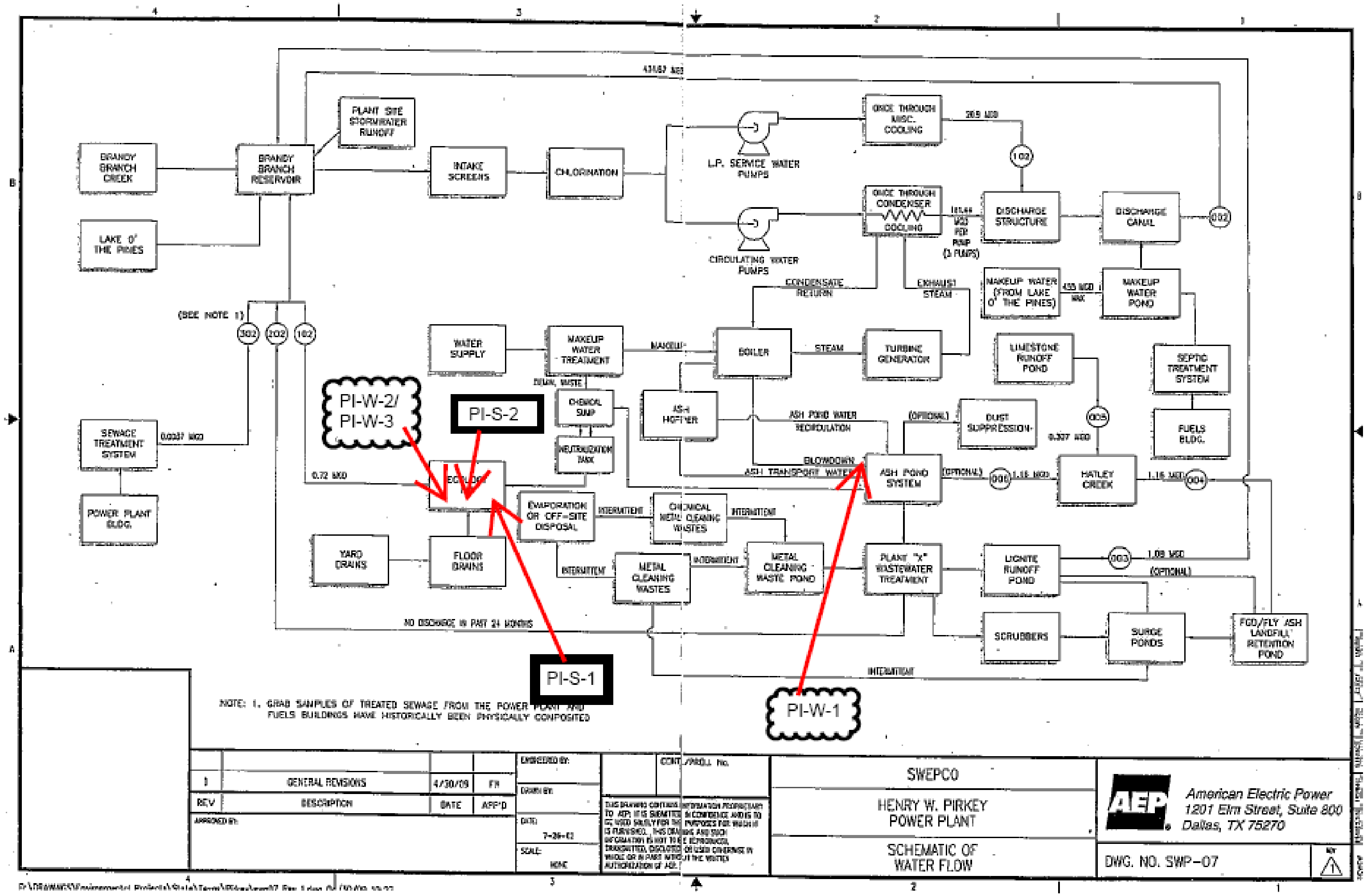

Figure 4-1. Sample Locations

4.3 Wednesday, August 26th Sampling Activities

This section provides specific information on samples collected on Wednesday August 26, 2009.

4.3.1 Sample PI-S-1

Table 4-3 presents information for sludge/sediment sample PI-S-1. SAIC personnel alternately collected samples for EPA/SAIC and the Pirkey Plant according to the Quality Assurance Project Plan (QAPP).

Table 4-3. Sample PI-S-1

Location	Ecology Sump (Oil-Water Separator Sludge) – inlet end
Date	August 26, 2009
Start Time	2:30 PM
Finish Time	2:42 PM
Sample Type	Grab
Matrix	Sludge/Sediment
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was lowered into the sump, filled with sludge, decanted to remove excess water from the top, and placed in a stainless steel bowl for mixing. Approximately 20 scoops were needed to fill the bowl and the bowl was decanted three times to remove excess water from the top. The sludge was then mixed for one minute and placed into sample containers using a large stainless steel spoon. SAIC immediately placed samples in a cooler lined with bags of ice and covered the samples with additional bags of ice. Pirkey Plant personnel were not ready to fill bottles until 2:57 PM and SAIC completed filling the Pirkey Plant sample bottles at 3:11 PM. Note: The sample bowl and contents sat in the sun while the Pirkey Plant personnel tried to determine which sample bottles to use. SAIC noted that the Pirkey Plant personnel did not place its samples on ice in the field.

Figure 4-2 is a photograph of the PI-S-1 sampling location.

Figure 4-2. Sample PI-S-1: Ecology Sump Inlet End

4.3.2 Sample PI-S-2

Table 4-4 presents information for wastewater sample PI-S-2. SAIC personnel alternately collected samples for EPA/SAIC and the Pirkey Plant in accordance with the approved QAPP.

Table 4-4. Sample PI-S-2

Location	Ecology Sump (Oil-Water Separator Sludge) – middle section
Date	August 26, 2009
Start Time	2:50 PM
Finish Time	3:20 PM
Sample Type	Grab
Matrix	Sludge/Sediment
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was lowered into the sump, filled with sludge, decanted to remove excess water from the top, and placed in a stainless steel bowl for mixing. Approximately 20 scoops were needed to fill the bowl and the bowl was decanted two times to remove excess water from the top. The bowl was filled at 3:00 PM but SAIC was filling the Pirkey Plant samples from PI-S-1 and had to wait until 3:13 PM to proceed with sample PI-S-2. The sludge was then mixed for one minute and placed into sample containers using a large stainless steel spoon. SAIC alternately filled EPA and the Pirkey Plant bottles; all EPA sample containers were filled by 3:20 PM, but it took another 12 minutes to fill the large number of bottles AEP requested. SAIC immediately placed samples on ice in a cooler. The Pirkey Plant personnel placed samples in a cooler with no ice.

Figure 4-3 is a photograph of the PI-S-2 sampling location.

Figure 4-3. Sample PI-S-2: Sludge/Sediment From Middle Section of Ecology Sump

4.4 Thursday, August 27th Sampling Activities

The following samples were collected from the Pirkey facility on Thursday, August 27, 2009.

4.4.1 Sample PI-W-1

Table 4-5 presents information for sample PI-W-1. SAIC personnel alternately collected samples for EPA/SAIC and the Pirkey Plant in accordance with the approved QAPP.

Table 4-5. Sample PI-W-1

Location	Boiler Blowdown
Date	August 27, 2009
Start Time	8:56 AM
Finish Time	8:59 AM
Sample Type	Grab
Matrix	Wastewater
Sample Collection Method	A 2-gallon stainless steel bucket was placed into the wastewater stream flowing from the discharge pipe into a pond. Because the wastewater was hot (approximately 150 degrees F), Pirkey Plant personnel requested that they be allowed to collect the wastewater into the bucket; EPA agreed. The wastewater was allowed to cool for 10 minutes then poured into the sample containers through a stainless steel funnel. Field pH and temperature measurements were collected as standard wastewater measurements. (It should be noted that the pH measurement is not accurate due to the high temperature.) SAIC filled EPA sample bottles between 8:56 and 8:59 AM, and filled the Pirkey Plant sample containers between 9:00 and 9:05 AM.

Figure 4-4 is a photograph of the PI-W-1 sampling location.

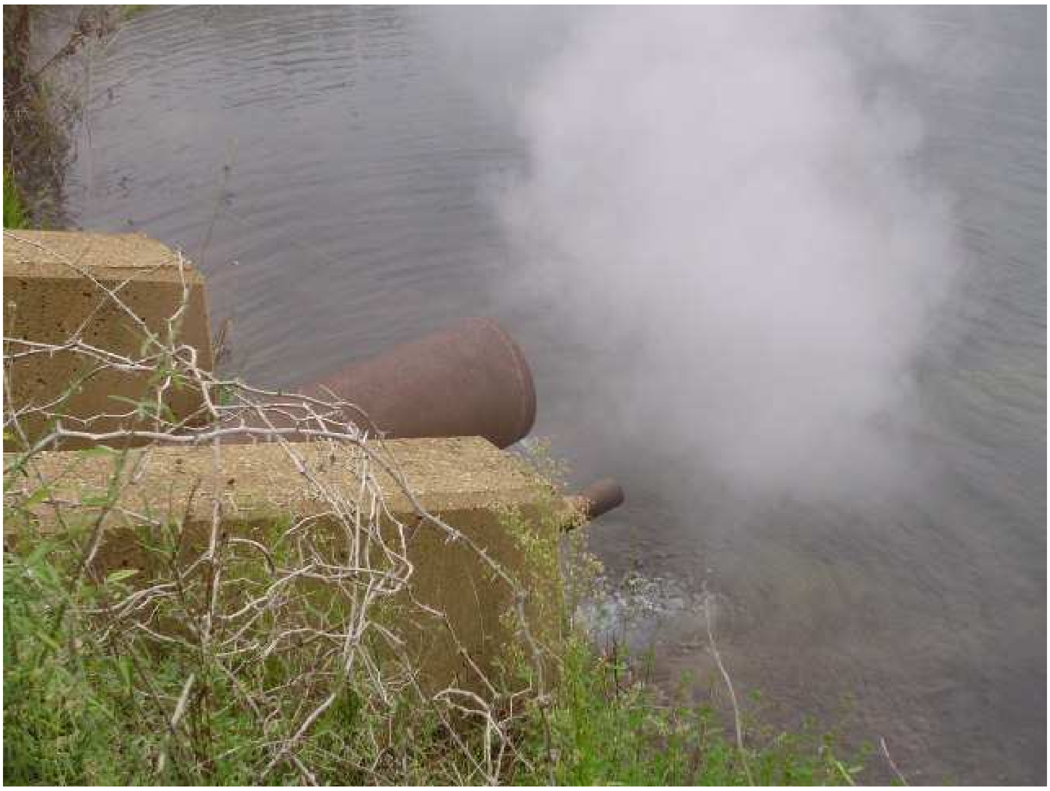

Figure 4-4. Sample PI-W-1: Boiler Blowdown

4.4.2 Sample PI-W-2

Table 4-6 presents information for sample PI-W-2. SAIC personnel alternately collected samples for EPA/SAIC and the Pirkey Plant in accordance with the approved QAPP.

Table 4-6. Sample PI-W-2

Location	Ecology Pit Wastewater – Discharge End
Date	August 27, 2009
Start Time	9:30 AM
Finish Time	9:49 AM
Sample Type	Grab
Matrix	Wastewater
Sample Collection Method	A 1-liter Teflon dipper with a short Teflon handle was used to collect wastewater from the discharge end of the Ecology pit. The collected wastewater was poured into the sample bottles using a stainless steel funnel. The dipper was refilled multiple times beginning at 9:30 AM and ending at 9:49 AM. SAIC alternately filled EPA and Pirkey Plant sample bottles.

Figure 4-5 is a photograph of the PI-W-2 sampling location.

Figure 4-5. Sample PI-W-2: Wastewater Discharge From Ecology Pit

4.4.3 Sample PI-W-3

Table 4-7 presents information for sample PI-W-3. SAIC personnel alternately collected samples for EPA/SAIC and the Pirkey Plant in accordance with the approved QAPP.

Table 4-7. Sample PI-W-3

Location	Ecology Pit Wastewater – Discharge End (Field Duplicate)
Date	August 27, 2009
Start Time	9:50 AM
Finish Time	10:00 AM
Sample Type	Grab
Matrix	Wastewater
Sample Collection Method	A 1-liter Teflon dipper with a short Teflon handle was used to collect wastewater from the discharge end of the Ecology pit. The collected wastewater was poured into the sample bottles using a stainless steel funnel. The dipper was refilled multiple times beginning at 9:50 AM and ending at 10:00 AM. SAIC alternately filled EPA and Pirkey Plant sample bottles.

Figure 4-6 is a photograph of the PI-W-3 sampling location.

Figure 4-6. Sample PI-W-3: Wastewater Discharge From Ecology Pit (Field Duplicate)

4.5 Sample Packaging and Shipment

After initial sample collection, all of the sample containers were immediately placed into a cooler containing bagged ice until they could be packaged for shipment. The representativeness of sample PI-W-1 may be in question for the following reasons. Pirkey Plant personnel stated that the boiler blowdown typically occurs for 8 to 12 hours once per week. It would be expected that contaminant concentrations would be highest early in the blowdown process. Pirkey Plant personnel indicated that the boiler blowdown valve had been opened the previous Friday (they were not sure of the duration of the blow down), opened 5 to 6 hours on Wednesday, August 26th, and opened on Thursday, August 27th at approximately 4:00 to 5:00 AM and had been open continuously up to the point in time the sample was collected (approximately 5 hours total). Pirkey Plant personnel did not explain the reason the boiler blowdown valve was apparently open more than the typical 8 to 12 hours per week.

Sample packaging for shipment consisted of lining a cooler with a clean plastic trash bag and placing two 2-gallon Ziploc bags, approximately one-half full of ice on the bottom of the cooler inside the trash bag. A layer of large sample bottles were placed on top of the ice. Another layer of ice (in Ziploc bags) was added on top. The remaining sample containers were placed on top of the previous layer of ice. Finally, a third layer of ice (in Ziploc bags) was added on top and the trash bag was sealed and secured by tying a knot and/or taping the bag shut. The chain of custody was properly completed for each sample location/cooler and placed on top of the sealed bag. The cooler was then taped shut with strapping tape. The custody seals were signed, dated, and placed on each cooler covered with a small piece of tape. Finally, the shipping air bill was properly completed and taped onto each cooler. This procedure completed the shipment process for each sample and its respective cooler.

During the entire sampling process (collection, packaging, etc.), SAIC followed the proper procedures outlined in the approved QAPP.

5.0 Analytical Results

Samples (three aqueous and two solids) were collected at the Pirkey Plant on August 26-27, 2009. Samples were analyzed for volatile organic compounds (VOCs) by method SW8260, semivolatile organic compounds (SVOCs) by method SW8270, metals by methods SW6010 and mercury by SW7470 for aqueous samples and SW7471 for solids. Toxicity Characteristic Leaching Procedure (TCLP) extracts were prepared as per SW846 1311 followed by analysis by the above methods, as appropriate. TCLP VOCs were evaluated based on the results of the total analyses adjusted for the dilution of the extraction fluid, and results were all non-detect. Therefore, a separate ZHE extraction was not required (as per SW846 1311, 1.2).

Complete tables of analytical results are located in Appendix C. The raw laboratory data reports are in Appendix D in electronic format. Sections 5.1 and 5.2 present results for parameters quantified above the method detection limit.

5.1 TCLP Analytical Results

Table 5-1 summarizes TCLP analytical results for aqueous and sediment (solid) samples collected at the Pirkey Plant. None of the sample results exceeds the corresponding TCLP regulatory limit. In fact, none of the TCLP parameters was detected above method detection limits.

Table 5-1. Selected TCLP Analytical Results:
Pirkey Plant Aqueous and Sediment (Solid) Samples

Field Sample ID	TCLP Regulatory Criteria	PI-S-1	PI-S-2	PI-W-01	PI-W-02	PI-W-03
Sample Date		8/26/09	8/26/09	8/27/09	8/27/09	8/27/09
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Arsenic	5	ND	ND	ND	ND	ND
Barium	100	ND	ND	ND	ND	ND
Cadmium	1	ND	ND	ND	ND	ND
Chromium	5	ND	ND	ND	ND	ND
Lead	5	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND
Mercury	0.2	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethylene	0.07	ND	ND	ND	ND	ND
1,1,2-Trichloroethylene	0.5	ND	ND	ND	ND	ND
1,1-Dichloroethylene	0.7	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND	ND
Benzene	0.5	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND	ND
Chlorobenzene	100	ND	ND	ND	ND	ND
Chloroform	6	ND	ND	ND	ND	ND
Methyl Ethyl Ketone (2-Butanone)	200	ND	ND	ND	ND	ND
Vinyl chloride	0.2	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	7.5	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	400	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	2	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.13	ND	ND	ND	ND	ND
2-Methylphenol	200	ND	ND	ND	ND	ND
4-Methylphenol, 3-Methylphenol	200	ND	ND	ND	ND	ND
Hexachlorobenzene	0.13	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND	ND
Hexachloroethane	3	ND	ND	ND	ND	ND
Nitrobenzene	2	ND	ND	ND	ND	ND
Pentachlorophenol	100	ND	ND	ND	ND	ND
Pyridine	5	ND	ND	ND	ND	ND
Total Cresols	200	ND	ND	ND	ND	ND

5.2 Total Analytical Results

Table 5-2 presents a summary of results for selected analytical results for aqueous and sediment (solid) samples collected at the Pirkey Plant for only those parameters detected over their method detection limits. All other parameters not summarized in Table 5-2, which were analyzed, had results below their detection limits.

Table 5-2. Summary of Selected Analytical Results:
Pirkey Plant Aqueous and Sediment (Solid) Samples

Field Sample ID	PI-S-1	PI-S-2	PI-W-01	PI-W-02	PI-W-03
Matrix	Solid	Solid	Water	Water	Water
Sample Date	8/26/09	8/26/09	8/27/09	8/27/09	8/27/09
Units	ug/kg	ug/kg	ug/l	ug/l	ug/l
VOCs - Total			*NT*		
Bromodichloromethane	ND	ND		20	ND
Dibromochloromethane	ND	ND		24	23
SVOCs - Total			*NT*		
2,4-Dimethylphenol	7100	ND		ND	ND
Bis(2-Ethylhexyl)phthalate	2600	ND		ND	ND
Phenol	1800	ND		ND	ND
Metals - Total	mg/kg	mg/kg	mg/l	mg/l	mg/l
Aluminum	23000	150000	0.035	0.44	0.43
Antimony	ND	ND	0.0057	ND	ND
Barium	150	470	ND	0.12	0.12
Cadmium	2.9	ND	ND	0.00068	0.00072
Calcium	11000	22000	ND	18	15
Chromium	71	290	ND	ND	ND
Copper	410	280	0.0026	0.0022	0.002
Iron	19000	23000	ND	ND	ND
Lead	75	ND	ND	ND	ND
Magnesium	820	2100	ND	7.5	6.4
Manganese	890	4600	ND	0.013	0.016
Nickel	53	ND	ND	ND	ND
Potassium	230	780	ND	9.8	9.2
Selenium	53	ND	ND	ND	ND
Sodium	ND	ND	ND	27	23
Vanadium	8.1	ND	ND	ND	ND
Zinc	420	500	ND	ND	ND
Mercury	0.37	ND	ND	ND	ND
pH (pH units)	7.0	6.7	6.8	7	7.4
% Solids	21.55	1.93	*N/A*	*N/A*	*N/A*
Reactive Sulfide	42	26	ND	54	49

5.3 Reliability of Analytical Data

Results were reviewed to determine the reliability of the data and evaluate any limitations on their use in support of project objectives. The data quality indicators were assessed including precision and accuracy. Sample quality control included holding times, surrogate recovery, and internal standard results. Batch QC analyses included tuning and calibration, method blanks, laboratory control samples, and matrix spikes.

5.3.1 Sample Receipt

Samples were received at the lab without noted exception.

5.3.2 VOC Analytical Review

All samples for total VOCs were analyzed within method specified holding times. Soils were extracted into methanol and analyzed as mid-level protocols with elevated detection limits (approximately 500 ug/kg). Prior to the analysis of any samples, the tune performance compound BFB was analyzed and an initial calibration (ICAL) was performed. Outlier compounds were evaluated for linearity via linear or non-linear regression. Every 12 hours that samples were analyzed, the instrument tune and calibration was verified. Continuing calibration verification

(CCV) standards were analyzed as required and generally met criteria. The CCV associated with the aqueous samples had methylene chloride as an outlier (% difference of 63%); therefore, the sample data were qualified as estimated. The response factor for several other compounds in the CCV slightly exceeded the % difference (%D) criteria relative to the ICAL response factor. The compounds were not detected in the samples, and therefore, there was minimal impact on data quality.

Surrogate and internal standards were added to the samples prior to analysis. Area counts and retention times for the internal standards met criteria and surrogate recoveries fell within laboratory control limits.

Method blanks were free of target compound contamination. Accuracy was assessed through the analysis of laboratory control samples (LCSs), which were analyzed with each analytical batch and matrix spikes or matrix spike duplicates (MS/MSD). Sediment sample PI-S-1 was analyzed as a spiked sample and had a mass ion interference which resulted in very high recovery of trichlorofluoromethane; therefore, results for this compound were flagged for this sample. The aqueous MS/MSD had poor recovery of 2-chloroethylvinyl ether although the LCS result was within control limits. Thus, data for this compound were flagged as estimated for the water samples.

Sample PI-W-2-TP was the trip blank and was free from contamination. The analysis of the field duplicate pair, PI-W-02 and PI-W-03, resulted in two compounds at or above the reporting limit (RL). Bromodichloromethane was detected in PI-W-02 at the RL of 20 ug/l; while not reported in PI-W-03 (the field duplicate), the raw data indicate that the compound was present at a concentration of 18 ug/l, which was below the RL. The compound dibromochloromethane was present in both the sample and field duplicate with an RPD of 4%. Other VOCs were reported as non-detect for both samples.

5.3.3 SVOC Analytical Review

All extraction and analysis holding times were met for total SVOCs (aqueous and solid samples). The specified holding time for TCLP extracts is 7 days from the TCLP leachate extraction to the preparative extraction of the leachate for SVOCs. Sediment sample TCLP leachates exceeded this holding time by two days; therefore, the data are qualified as estimated. Due to batch QC failure, the aqueous leachates required re-extraction, which occurred 11 days after holding time; therefore, the data are qualified as estimated.

Prior to the analysis of any samples, the tune performance compound DFTPP was analyzed and an initial calibration was performed. Outlier calibration compounds were evaluated for linearity via linear or non-linear regression. Every 12 hours that samples were analyzed, the instrument tune and calibration was verified. The continuing calibration associated with the analysis of the soil sample had response factor (RF) % differences > 40% relative to the initial calibration for the following compounds: hexachlorocyclopentadiene, pyrene, benzidine and di-n-octyl phthalate. Data for these compounds were qualified as estimated. All method blanks were free of target compound contamination.

Surrogates were added to samples prior to extraction and internal standards were added to the extracts prior to analysis. Internal standard area counts and retention time criteria were met for all samples except the total SVOC analysis of PI-S-1. The chromatogram for this sample indicates that baseline interference impacted the last two internal standard area counts; therefore, data for this sample are qualified as estimated. Surrogate recoveries were within control limits for most samples; again, due to chromatographic interference, PI-S-1 had elevated recovery above the upper control limit of one surrogate. The analysis of this sample as a matrix spike confirmed matrix interference, and all other surrogates were within control limits.

Laboratory control samples (LCS) and matrix spike duplicates were analyzed with each batch of samples to assess accuracy and precision. The soil matrix spike associated with these samples was from performed on sample PI-S-1. Several compounds required qualification due to MS/MSD and/or LCS results. Benzidine, 1,2,4-trichlorobenzene, and 1,4-dichlorobenzene data are considered estimated, and carbazole data are qualified as unusable ("R") due to no recovery in both the MS/MSD and LCS analyses. In addition, outlier spike results indicated that TCLP data for 1,4-dichlorobenzene should be qualified as estimated (although all TCLP data are already qualified based on holding time exceeedances).

The analysis of the field duplicate pair, PI-W-02 and PI-W-03, resulted in all SVOCs as non-detect for both samples.

5.3.4 Metals Analytical Review

Samples were analyzed for Total TAL metals and TCLP metals. All samples were analyzed within method specified holding times.

Calibration was performed as per method requirements and included initial calibration verification standards, continuing calibration verification standards, initial and continuing calibration blanks. A few calibration and method blanks had low level contamination of several metals. However, sample results were either ND or greater than 10 times the blank concentrations, and there was no impact on data quality.

Matrix spike duplicates (MS/MSDs) and laboratory control samples (LCS) and duplicate samples were analyzed with each batch of samples. The LCS associated with the TCLP analyses had silver recovery below the lower control limit; thus, the detection limit data were qualified as estimated. Duplicate samples generally met criteria for precision with RPD values within control limits for samples with results above the RDL with the exception of mercury. Sample PI-S-1 was analyzed in duplicate and results had an RPD of 42 % for mercury. Therefore, data for this sample are qualified as estimated.

Field duplicate results for total metals in PI-W-02 and PI-W-03 were in agreement with the RPD between the samples being less than 21% for metals that were detected at concentrations above the reporting limit. TCLP metals were ND in both samples.

5.3.5 Wet Chemistry Review

Reactive Sulfide: The matrix spike recovery associated with these samples was outside laboratory established control limits; therefore, data are considered to be estimated values.

Reactive Cyanide analyses were performed for all samples. LCS and matrix spike recoveries, although low, were within laboratory control limits.

pH: The pH of the aqueous samples was determined outside of holding time; therefore all results are qualified as estimated. The pH of PI-W-02 was reported as 7.0, and the pH of PI-W-03 was 7.4; this 0.4 pH unit difference represents a 6 % RPD.

5.4 Summary of Data Usability and Limitations

Based on the review of analytical data, as detailed above, some sample results have been identified as having QC non-conformance such that the data cannot be used without qualification. Several results were considered unusable; the results for these samples were qualified with a Data Validation Qualifier (DVQ) of R. Other data, that were considered to be estimated results, were qualified with a DVQ of J or UJ and have been so indicated in the data tables.

All other sample data can be used without additional limitation or qualification for the evaluation of project objectives.

6.0 Regulatory Review

6.1 RCRA

Ms. Steele, EPA Region 6, took the lead for the RCRA inspection and is preparing a separate report. Ms. Richardson of SAIC provided input in the field to Ms. Steele based on observations during the inspection. SAIC's observations are described in this section.

Based on review of the Pirkey Plant documentation, Texas Commission on Environmental Quality (TCEQ) documentation, and research on the RCRIS Info website, the Pirkey Plant is a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste, generating less than 220 pounds of non acute hazardous in a calendar month and accumulating less than 2,200 pounds of non acute hazardous waste on site. The Pirkey Plant maintains EPA ID number TXD000726380. Texas hazardous waste regulations permit CESQGs to dispose of hazardous waste through an off-site treatment, storage and disposal facility (TSDF) located in the U.S. that is permitted, licensed, or registered by Texas to manage municipal or industrial solid waste. The Pirkey Plant utilizes off-site TSDFs, off-site municipal landfills, and on-site landfills for the disposal of hazardous waste.

A site walk though was conducted August 24 - 26, 2009 by SAIC, EPA, TCEQ staff, and the Pirkey Plant Lead Environmental Coordinator. Areas visited included the control room, demineralization process, chemical sump, neutralization tanks, oil container storage area, oil storage building, electrical shop, universal waste accumulation areas, laboratory, Ecology pit, lignite runoff pond, landfill retention pond, industrial landfill, limestone runoff pond, primary (East and West) and secondary ash ponds, solid waste containers, demineralizer yard drains, and water valves.

A review of waste profile documentation identified the following potential issues:

- The Ecology Pit Sludge waste stream was determined to be a solid waste (Texas Class 2 non-industrial waste) based on generator knowledge and sampling data from another plant. It is not clear this information is representative of the Pirkey Ecology Pit Sludge. Pirkey Plant personnel used generator knowledge to determine the sludge generated from the Ecology Pit is non-hazardous. The determination was made using analytical data provided from a sample taken of the sludge at a similar pit managed at a 'nearby' power plant (Knox Lee Power Plant) on November 11, 1998. The Knox Lee Power Plant sludge pit samples did not exceed any RCRA metals regulatory limits. The Pirkey Plant sludge waste profile documentation identified the following quantities generated annually 230,000 pounds in 2008, 0 pounds in 2007, and 133,200 pounds in 2006. According to the waste stream schematic, this waste can be discharged to the on-site plant trash (Industrial) landfill or on-site ash landfill (WMU 003). Pirkey Plant personnel stated that the 2008 sludge waste was disposed in the ash landfill. According to the Pirkey Plant waste profile documentation, the sludge includes sediment and debris from the basin of the Ecology Pit. Pirkey Plant personnel stated that the Ecology Pit accepts plant wastewater from industrial and non-industrial areas and backwash from the water treatment system.

- According to Pirkey Plant personnel, waste oil water separator filters generated from the Ecology pit are managed under Waste Code 00023101, as non-hazardous oily debris. No documentation exists to demonstrate that these filters, a potentially hazardous waste, have been properly characterized prior to inclusion in the non-hazardous oily debris waste stream. No waste disposal documentation is available to identify when these filters had last been disposed. The Ecology pit has been in operation since 2001.

- The Demineralization Regeneration process waste stream (Neutralized Demineralizer Regenerant, Waste Code 00241142) is comprised of caustic regenerant waste (Waste Code 02141102) and acid regenerant waste. The neutralized demineralizer regenerant waste stream is waste code 00241142, generated 5/21/02. According to the waste determination information, the sample was tested at the chemical sump where acid and caustic regenerant waste had been collected after the regeneration process was complete. The grab sample was collected after the acid and caustic scrubbing phase of the demineralizer beads. The two waste streams are discharged through the chemical sump to the East and West Ash Ponds. The timing of the acid and caustic stream discharges is based on demineralizer regeneration requirements (when the specific cationic or anionic resin bed is depleted as indicated by in-line water readings). Pirkey Plant personnel confirmed that these streams are frequently discharged at separate times such that they are not in direct contact and, therefore, not neutralized.

  The un-neutralized caustic regenerant waste stream is Waste Code 02141102, generation date 5/21/02. According to sampling data obtained 7/15/02, the waste stream has a pH of 12.8. Waste determination discussion provided along with the sampling data states that the waste is exempt from RCRA regulations per the 'Dietrich Letter' which exempts demineralization wastewaters as uniquely associated low-volume Bevill wastes. This may not be consistent with EPA Guidance.

- According to the waste stream schematic, the Low Volume Wastewaters waste stream includes wastewater associated with ion exchange, water treatment, lab sinks, boiler blowdown, floor drains, air heater condensate, and wash waters. This waste stream, Waste Code 02121142, generation date 7/12/02, was initially sampled at the Ecology Pit oil/water separator inlet and outlet in 2002. According to Pirkey Plant personnel, the discharge process and destination for this waste stream has changed and currently all Low Volume Wastewaters are discharged out to the Ash Ponds.

  During the site walk through, five 1-gallon containers approximately 60% full of acetone were observed in the Laboratory corrosives cabinet. According to lab personnel interviewed on August 25, 2009, acetone is used to wash out laboratory equipment and all spent acetone and water is discharged down the Laboratory sink, through the chemical sump, and disposed in the Ash Pond. During a follow-up conversation on August 26, 2009, Laboratory personnel confirmed the acetone practice with the Instrumentation and Electronics shop personnel who stated that they do not use acetone in the lab process. Laboratory personnel are unaware of the previous use of the acetone and the final disposal location of the spent chemical is unknown.

6.2 EPCRA

6.2.1 Tier I and II

Subpart B Community Right-To-Know reporting requirements apply to any facility that is required to prepare or have available a material safety data sheet (MSDS) for a hazardous chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act. The minimum threshold for reporting for extremely hazardous substances is 500 pounds (or 227 kilograms--approximately 55 gallons) or the Threshold Planning Quantity (TPQ), whichever is lower. The minimum threshold for reporting for all other hazardous chemicals is 10,000 pounds (or 4,540 kilograms) (40 CFR §370.20).

40 CFR §370.25 requires the owner or operator of a facility subject to Subpart B to submit an inventory form to the State Emergency Response Commission (SERC), the Local Emergency Planning Committee (LEPC), and the fire department with jurisdiction over the facility. The inventory form containing Tier I information on hazardous chemicals present at the facility during the preceding calendar year above the threshold levels stated above must be submitted on or before March 1st of each year. The facility may submit a Tier II form in lieu of the Tier I information.

SAIC performed the following reviews for the calendar-year 2007 and 2008 Tier II forms for the Pirkey Plant.

1) Confirmed that the reports had been submitted by March 1st for calendar years 2006, 2007, and 2008 for the previous calendar years to the SERC, LEPC and local emergency response agency. AEP filed Tier III reports electronically on February 5, 2009, with a supplemental submission on August 7, 2009, reporting a new Plant Manager. AEP filed Tier II reports on January 31, 2008, and submitted revisions on May 7, 2008 and June 15, 2008 for new chemicals purchased during the year. AEP filed Tier II forms prior to March 1, 2007 and a revision on April 12, 2007 to indicate the relocation of ammonium hydroxide storage.

2) Spot checked quantities of chemicals stored in various locations throughout the two facilities to identify any chemicals currently stored in excess of the respective reportable quantity, recognizing that current quantities are not reportable until next March. The intent was to identify chemicals currently in excess of Reportable Quantities (RQs) and attempt to determine if RQs were exceeded in 2007 and 2008. Typically the SAIC inspector would a) compare inventory documents for previous years to the Tier II forms to confirm all chemicals above RQ were reported and b) compare current inventory documents to current physical inventories to confirm the accuracy of the inventory system. However, Pirkey Plant personnel could not produce current or past document inventories for chemicals stored. The Environmental Manager stated that chemical

inventories are not maintained and that chemicals are ordered on an as needed basis. Additionally, she stated that chemicals stored in tanks are reported at maximum tank capacity or working volume. Limited time prevented a comprehensive review of purchasing and usage records (it is not clear that usage is documented) in lieu of chemical inventory records. Therefore, a comparison of current physical inventories to current document inventories and a cross-check of previous calendar year document inventories to Tier II reports could not be performed. The SAIC inspector did not observe any chemicals currently exceeding RQ values that had not been reported in previous Tier II reports.

3) To the extent that time constraints and the availability of Pirkey Plant personnel allowed, the SAIC inspector documented storage capacity of tanks and compared those quantities to Tier II reported quantities. Again, no discrepancies were noted.

6.2.2 Toxics Release Inventory (TRI)

The Environmental Manager at the Pirkey Plant confirmed that the Pirkey Plant is a covered facility as defined in 40 CFR §372.22 and is required to implement Toxic Chemical Release Reporting, commonly known as TRI, because it has more than 10 employees and is in a covered Standard Industrial Classification (SIC) Code.

40 CFR §372.25(b) requires TRI reporting by facilities that manufacture or process 25,000 pounds of a chemical for the year and “otherwise use” at a facility 10,000 pounds of the chemical for the applicable calendar year. Manufacture means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity. Otherwise use means any use of a toxic chemical, including a toxic chemical contained in a mixture or other trade name product or waste, that is not covered by the terms "manufacture" or "process." Otherwise use of a toxic chemical does not include disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction. Process means the preparation of a toxic chemical, after its manufacture, for distribution in commerce.

SAIC reviewed TRI Form R submissions for 2006, 2007, and 2008, and spot checked the accuracy of calculations. SAIC reviewed the TRI calculation spreadsheets provided by Pirkey Plant personnel for 2006, 2007, and 2008. The review indicates that TRI data are properly calculated and chemicals are properly reported for the limited dataset checked.

6.3 CWA

Water, pumped from Brady Branch Reservoir, passes through bar grills at the intake structure into the travelling screens. Twice a day the travelling screens are operated for approximately 30 minutes to backwash the screens. Intake water may be chlorinated during warmer months. Three water pumps, each rated at 126,000 gallons per minute (gpm) provide cooling water for the main and auxiliary condensers. Figure 6-1 presents a schematic of the water flow at the Pirkey Plant.

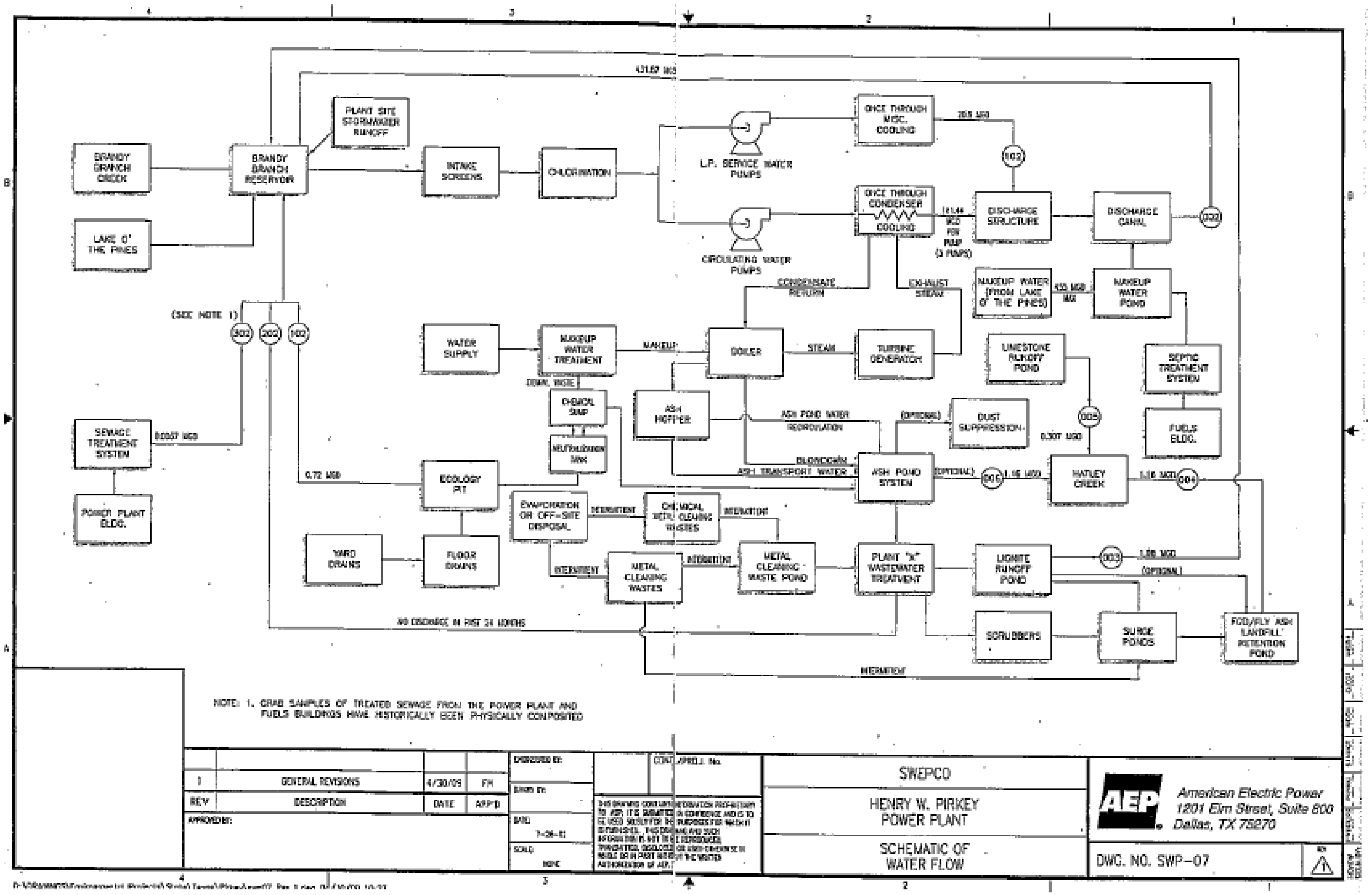

Figure 6-1. Schematic Water Flow Diagram

6.3.1 Spill Prevention, Control, and Countermeasure (SPCC) Plan and Facility Response Plan (FRP) Review

SAIC reviewed the facility's Spill Prevention, Control and Countermeasure (SPCC) Plan. The SPCC Plan was dated March 2009 and signed by a Professional Engineer on March 30, 2009. Pirkey Plant personnel have determined that the site does not need a Facility Response Plan (FRP) based on the substantial harm criteria and have signed the appropriate certification.

The following items are noted regarding either SPCC Plan development or implementation:

Location of all bulk storage containers, either aboveground storage tanks or 55-gallon drum storage areas, is not included on the SPCC Plan site plan.

The SPCC Plan does not identify or address the aboveground storage tank (approximately 300-gallon capacity – capacity not noted on tank) associated with the Ecology pit's oil/water separator unit. Additionally, this product recovery tank lacks secondary containment and is used to collect oil from the Ecology pit.

Integrity testing of aboveground storage tanks used for oil storage has not been performed in accordance with industry standards and the requirements of the SPCC Plan. The SPCC Plan did not indicate the date of installation of the aboveground storage tanks located throughout the facility. This information could not be determined form name plate tags on the tanks. However, several of the aboveground storage tanks appeared to be older than 10 years old. Pirkey Plant personnel indicated that it is likely that these aboveground tanks are over 10 years old and were installed at facility construction.

The 10,000-gallon turbine oil product or used aboveground storage tanks do not have a high level alarm that meets the requirements of 40 CFR 112.8 (c)(8). The existing level meter is inside of the turbine building without an audible or visual signal at a constantly attended station that can notify the delivery operator of reaching high level set points in the storage tanks.

The used oil transfer point in the maintenance garage lacks an appropriate high level alarm. The transfer pump and suction tubing is located inside of the garage, whereas the 1,033-gallon used oil tank is outside of the garage. It is not in direct sight of the indoor transfer point, and no audible or visible alarm is provided.

The turbine oil reservoir system is noted in the SPCC Plan as having insufficient containment capacity to provide secondary containment. The turbine oil reservoir system holds 11,000 gallons. The SPCC Plan states that it has a 1,000-gallon containment capacity using the drainage system associated with the ecology tank and associated oil/water separator system and product recovery tank (based on predicted spill flow rate of 100 gallons per hour). A flow rate of greater than this would likely short circuit the separator performance and result in a discharge.

6.3.2 Storm Water Pollution Prevention Plan (SWPPP) and National Pollutant Discharge Elimination System (NPDES) Review

EPA Region 6 took the lead on assessing the National Pollutant Discharge Elimination System (NPDES) permit which included both industrial and stormwater discharges. Region 6 will prepare a stand-alone report to summarize this assessment.

7.0 References

SAIC. 2009. *Quality Assurance Project Plan for Power Plant Waste Management Compliance Investigations*. Science Applications International Corporation. June 2009.

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APPENDIX A

GOOGLE EARTH PHOTOGRAPHS

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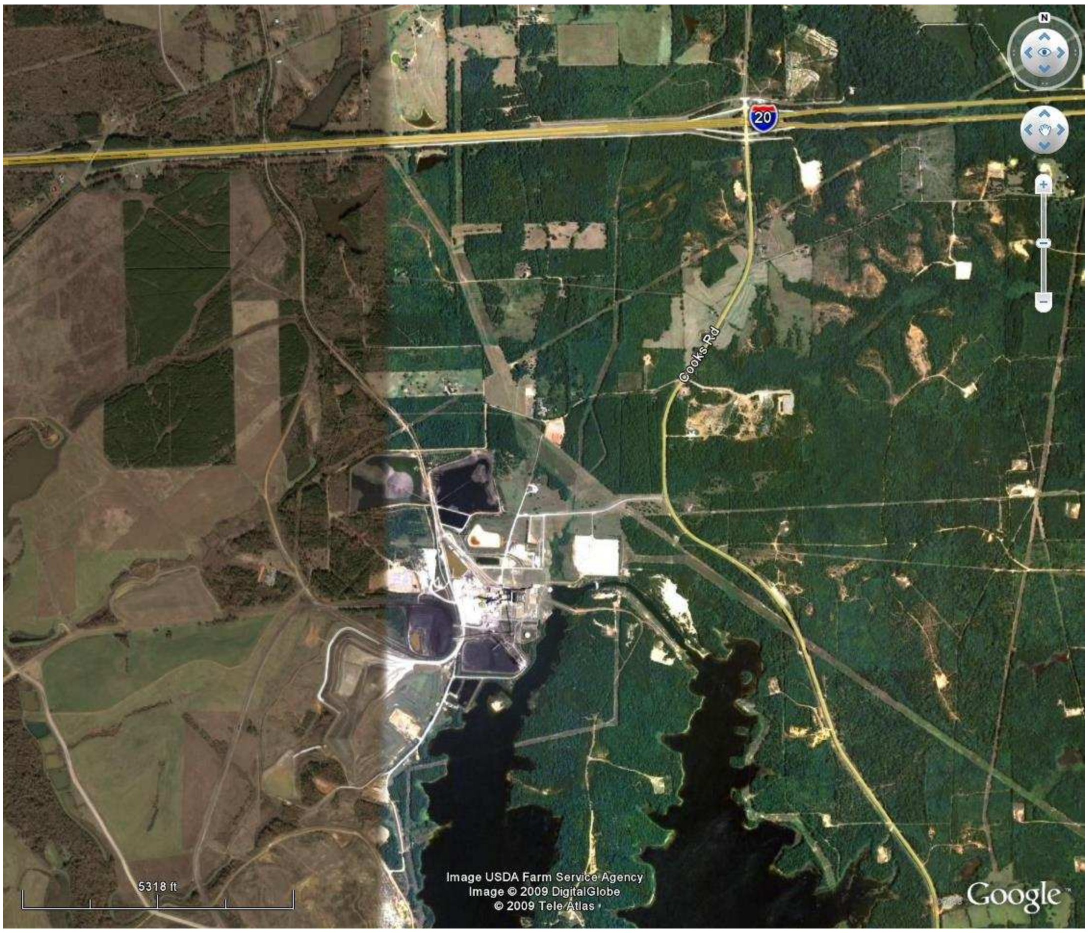
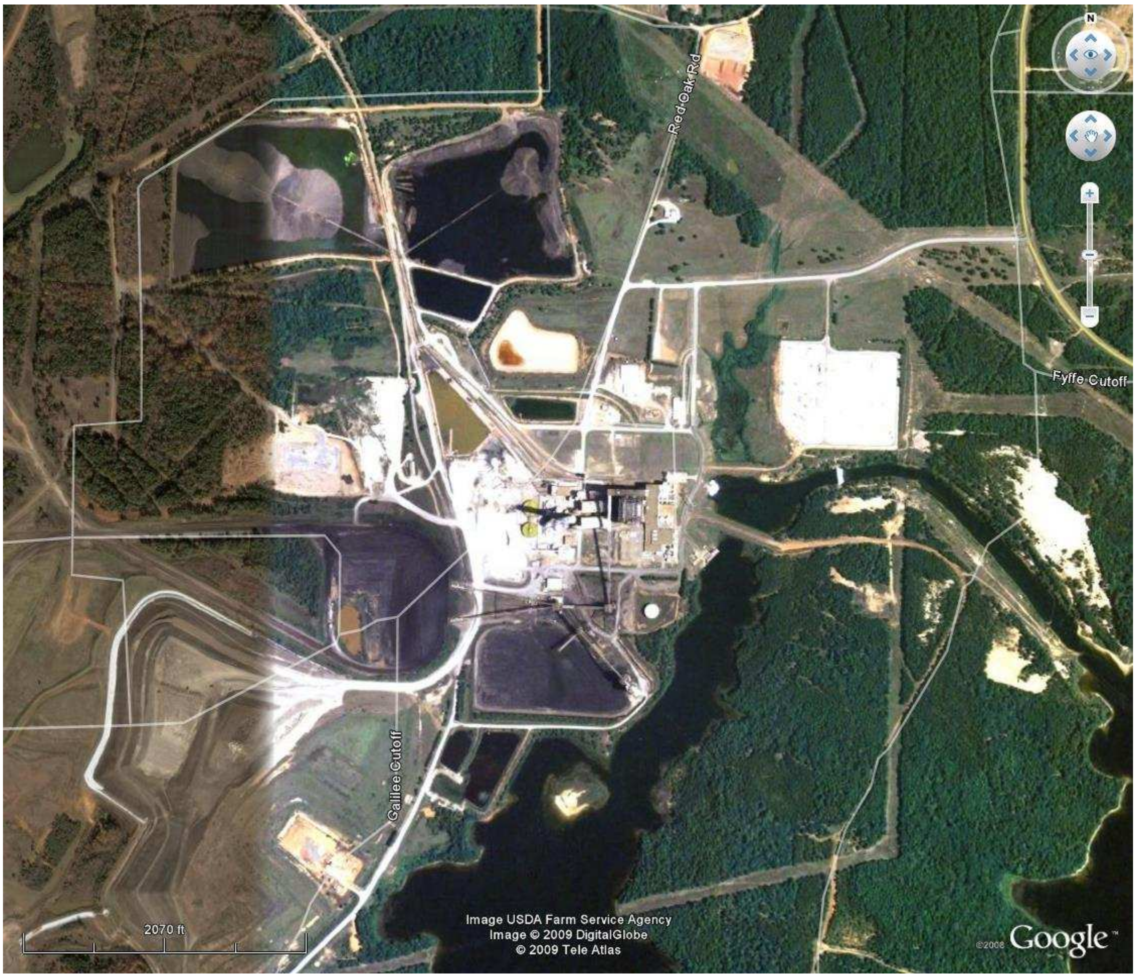


Pirkey Power Plant and Surrounding Area



Pirkey Power Plant Overview

Pirkey Power Plant – North End


Red Oak Rd
Galilee Cutoff
863 ft
Image USDA Farm Service Agency
Image © 2009 DigitalGlobe
© 2009 Tele Atlas
©2008 Google

Pirkey Power Plant – South End

Pirkey Plant Stacks and Storage Tanks

APPENDIX B

CHAIN OF CUSTODY FORMS

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Microbac

Baltimore Division
Baltimore, MD 21224
Tel: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Sample Submittal
Chain of Custody Record

Work Order Number: 09H0911 EPA-SICCW-JZ

Page 1 of 1

Client Name SAIC	Project Pirkey EPA SI NPDES YES/NO	Turnaround Time (Required)	QC and EDD Type (Required)
Address 5 Tallwood Trail	Location Pirkey	[X] Standard	[ ] Level I (NAC) [X] EDD
City, State, Zip Miller Place, NY 11764	PO # EPA-SICCW-JZ	[ ] RUSH* (notify lab)	[ ] Level II ** Format: Excel
Contact Joseph Zollo	MDE Drinking Water Certified Sampler? YES / NO	(needed by)	[X] Level III ** Comments:
Telephone # (631) 474-8541 (516) 446-2662	Certification #		[ ] Level IV **

Sampled by (PRINT) Joseph Zollo Sampler Signature Sampler Phone # 516 44-2662

Send Report via [ ] e-mail (address) joseph.j.zollo@saic.com [X] Mail [ ] Telephone [ ] Fax (fax #) Hard Copy [X] YES [ ] NO

* **Matrix Types:** Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	TCLP Metals & Organics	TCLP Volatile	Volatiles	Semi-Volatiles	Metals	Reactivity & PH				Comments
PI-S-1	S	X	-	-	8/26/09	1435	6	2	1	1	1	*	1				No P/H on TCLP
PI-S-2	S	X	-	-	8/26/09	1515	6	2	1	1	1	*	1				* Same as TCLP container

Possible Hazard Identification [ ] Hazardous [X] Non-Hazardous [ ] Radioactive **Sample Disposition** [X] Dispose as appropriate [ ] Return [ ] Archive

Number of Containers: 12	Relinquished By (signature)	Printed Name/Affiliation Joseph Zollo SAIC	Date/Time 8/26/09 1630	Received By (signature) Fed Ex	Printed Name/Affiliation
Cooler Number: Temp upon receipt(°C): 4.1	Relinquished By (signature) Fed Ex	Printed Name/Affiliation	Date/Time	Received By (signature) Melanie Dusynski	Printed Name/Affiliation
Sample Received on Ice or Refrigerated from Client: Yes / No	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received for Lab By (signature)	Printed Name/Affiliation

501 6/09 ** Surcharge May Apply to add'l QC Packages ** WHITE - LAB YELLOW - REPORT PINK - CLIENT RECEIPT Page 1 2

Microbac	**Baltimore Division** Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com	***Sample Submittal*** ***Chain of Custody Record***	***Work Order Number:*** 09H0966 Page 1 of 1

Client Name Joseph Zollo SAIC	Project EPA SICCW NPDES YES/NO	**Turnaround Time (Required)**	**QC and EDD Type (Required)**
Address 5 Tallmadge Trail	Location Pickey AEP	[X] Standard	[ ] Level I (NAC) / [X] EDD
City, State, Zip Miller Place, NY 11764	PO # JZ EPACCW	[ ] RUSH* (notify lab)	[ ] Level II ** / Format: Excel
Contact Joseph Zollo	MDE Drinking Water Certified Sampler? YES / NO (NO circled)	_____ (needed by)	[X] Level III ** / Comments:
Telephone # 516 946-2662 cell 631 974-0541 office	Certification #		[ ] Level IV **

Sampled by (PRINT) PI-W-1: Ron Franklin AEP / Joseph Zollo SAIC — Sampler Signature Ron Franklin [signature] — Sampler Phone # 703-927-5894 / 516 946-2662

Send Report via [X] e-mail (address) joseph.j.zollo@saic.com [X] Mail [ ] Telephone [ ] Fax (fax #) ______ Hard Copy [X] YES [ ] NO

* **Matrix Types:** Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	TCLP metals/organics	w/o pest/herb	SVOCs	VOCs	Metals	Reactivity/pH				Comments
PI-W-01	W	X			8/27/09		5	X				X	X				TCLP-METALS ONLY no VOC/organics
PI-W-02	W	X			8/27/09		11	X		X	X	X	X				
PI-W-03	W	X			8/27/09		11	X		X	X	X	X				

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive **Sample Disposition** [ ] Dispose as appropriate [ ] Return [ ] Archive

Number of Containers: **Cooler Number:**	**Relinquished By (signature)** Ron Franklin [signature]	Printed Name/Affiliation Ron Franklin AEP / Joseph Zollo SAIC	**Date/Time** 8/27/09 8/27/09	**Received By (signature)** Fed Ex	Printed Name/Affiliation
Temp upon receipt(°C): Sample Received on Ice or Refrigerated from Client: Yes / No	**Relinquished By (signature)** Fed Ex	Printed Name/Affiliation	**Date/Time** 8/28/09 0930	**Received By (signature)** Melanie Duszynski MU	Printed Name/Affiliation
	Relinquished By (signature)	Printed Name/Affiliation	**Date/Time**	**Received for Lab By (signature)**	Printed Name/Affiliation

501 6.09 ** Surcharge May Apply to add'l QC Packages ** WHITE - LAB YELLOW - REPORT PINK - CLIENT RECEIPT Page 1 2

APPENDIX C

LAB RESULTS

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QUALIFIER	DESCRIPTION
#	QC not in acceptance limits.
A2	Results expressed as mg/L TCLP extract after performing total analysis of the sample and adjusting the result to reflect the 20 times dilution in the TCLP extraction procedure.
B	Analyte is found in method blank.
B2	Target analyte detected in method blank at or above reporting limit. Concentration found in the samples was 20 times the concentration found in the method blank.
D	Sample Diluted
E3	Concentration estimated due to internal standard recoveries out of acceptance limits.
H6	Sample received past holding time; analysis best performed at time of collection.
L2	The LCS recovery was above the laboratory acceptance limits. The target analyte concentration was below the reporting limit. No negative impact on the data.
L3	The LCS recovery was below the laboratory acceptance limits. The reported result is estimated.
M1	The matrix spike recovery was out of acceptance limits. The post digestion spike recovery was acceptable.
M2	The matrix spike recovery was biased high. The reported result was below the reporting limit. No negative impact on the data.
M3	The matrix spike recovery was biased high, the LCS recovery was acceptable.
M5	The matrix spike recovery was biased low, the reported result is estimated.
M6	The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample is disproportionate to the spike level. The LCS recovery is acceptable.
ND	Not Detected
R1	Sample Duplicate RPD was out of acceptance limits.
R2	MS/MSD RPD was out of acceptance limits. Recoveries met acceptance limits.
R3	Sample Duplicate RPD was out of acceptance limits. The result concentration was within 5 times the reporting limit and the difference was less than the reporting limit.
R4	MS/MSD RPD was out of acceptance limits.
S1	Surrogate recovery was above laboratory acceptance limits. No negative impact on the data.
S4	Surrogate recovery was below laboratory acceptance limits. Reported data is estimated.
U	Sample concentration is less than the MDL.
V6	CCV recovery was below acceptance limits. The reported result is estimated.
Z10	Continuing Calibration Blank (CCB) contained a detectable amount of target analyte, sample concentration was less than the reporting limit, no impact on data.
Z10a	Initial sample batch QC failed. Samples re-extracted after required hold time.

TCLP DATA																
Field Sample ID		PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03		
Lab Sample ID		09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03		
Matrix	TCLP Regulatory	Leachate			Leachate			Water			Water			Water		
Sample Date	Criteria	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	mg/l	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ
Arsenic	5	ND			ND			ND			ND			ND		
Barium	100	ND			ND			ND			ND			ND		
Cadmium	1	ND			ND			ND			ND			ND		
Chromium	5	ND			ND			ND			ND			ND		
Lead	5	ND			ND			ND			ND			ND		
Selenium	1	ND			ND			ND			ND			ND		
Silver	5	ND		J	ND		J	ND		J	ND		J	ND		J
Mercury	0.2	ND	D		ND	D		ND			ND			ND		
1,1,2,2-Tetrachloroethylene	0.07	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
1,1,2-Trichloroethylene	0.5	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
1,1-Dichloroethylene	0.7	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	V6, A2, U	
1,2-Dichloroethane	0.5	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Benzene	0.5	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Carbon Tetrachloride	0.5	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Chlorobenzene	100	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Chloroform	6	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Methyl Ethyl Ketone (2-Butanone)	200	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
Vinyl chloride	0.2	ND	A2, U, D		ND	A2, U, D		ND	A2, U		ND	A2, U		ND	A2, U	
1,4-Dichlorobenzene	7.5	ND	U	J	ND	U	J	ND	L3, Z10a, U	J	ND	L3, Z10a, U	J	ND	L3, Z10a, U	J
2,4,5-Trichlorophenol	400	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
2,4,6-Trichlorophenol	2	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
2,4-Dinitrotoluene	0.13	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
2-Methylphenol	200	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
4-Methylphenol, 3-Methylphenol	200	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Hexachlorobenzene	0.13	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Hexachlorobutadiene	0.5	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Hexachloroethane	3	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Nitrobenzene	2	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Pentachlorophenol	100	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Pyridine	5	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J
Total Cresols	200	ND	U	J	ND	U	J	ND	Z10a, U	J	ND	Z10a, U	J	ND	Z10a, U	J

VOC DATA																		
																Trip Blank		
Field Sample ID	PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03			PI-W-2-TP		
Lab Sample ID	09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03			09H0966-04		
Matrix	Solid			Solid			Water			Water			Water			Water		
Sample Date	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ		Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ
1,1,1,2-Tetrachloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1,1-Trichloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1,2,2-Tetrachloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1,2,2-Tetrachloroethylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1,2-Trichloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1,2-Trichloroethylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1-Dichloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,1-Dichloroethylene	ND	U, D		ND	U, D					ND	U, D		ND	V6, U, D		ND	V6, U, D	
1,1-Dichloropropylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2,3-Trichlorobenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2,3-Trichloropropane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2,4-Trimethylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2-Dibromo-3-chloropropane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2-Dibromoethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2-Dichloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,2-Dichloropropane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,3,5-Trimethylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
1,3-Dichloropropane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
2,2-Dichloropropane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
2-Chloroethyl Vinyl Ether	ND	U, D		ND	U, D					ND	U, D	J	ND	U, D	J	ND	U, D	J
2-Chlorotoluene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
4-Chlorotoluene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
4-Isopropyltoluene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Acetone	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Acetonitrile	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Acrolein	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Acrylonitrile	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Allyl Chloride (3-Chloropropylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Benzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Bromobenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Bromochloromethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Bromodichloromethane	ND	U, D		ND	U, D					20	D		ND	U, D		ND	U, D	

VOC DATA																		
																Trip Blank		
Field Sample ID	PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03			PI-W-2-TP		
Lab Sample ID	09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03			09H0966-04		
Matrix	Solid			Solid			Water			Water			Water			Water		
Sample Date	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ		Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ
Bromoform	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Bromomethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Butylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Carbon disulfide	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Carbon Tetrachloride	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Chlorobenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Chloroethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Chloroform	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Chloromethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Chloroprene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
cis-1,2-Dichloroethylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
cis-1,3-Dichloropropylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Dibromochloromethane	ND	U, D		ND	U, D					24	D		23	D		ND	U, D	
Dibromomethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Dichlorodifluoromethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Ethyl Methacrylate	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Ethylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Iodomethane	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Isopropylbenzene (Cumene)	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
m,p-Xylenes	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methacrylonitrile	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methyl Butyl Ketone (2-Hexanon	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methyl Ethyl Ketone (2-Butanone	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methyl Isobutyl Ketone	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methyl Methacrylate	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Methylene Chloride	ND	U, D		ND	U, D					ND	U, D	J	ND	U, D	J	ND	U, D	J
Methyl-tert-Butyl Ether	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
o-Xylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Propionitrile (Ethyl Cyanide)	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Propylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
sec-Butylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Styrene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
tert-Butylbenzene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Toluene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Total Xylenes	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
trans-1,2-Dichloroethylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
trans-1,3-Dichloropropylene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
trans-1,4-Dichloro-2-butene	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Trichlorofluoromethane	ND	U, D	J	ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Vinyl acetate	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	
Vinyl chloride	ND	U, D		ND	U, D					ND	U, D		ND	U, D		ND	U, D	

SVOC DATA															
Field Sample ID	PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03		
Lab Sample ID	09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03		
Matrix	Solid			Solid			Water			Water			Water		
Sample Date	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ
1,2,4-Trichlorobenzene	ND	M5, U	J	ND	M5, U	J				ND	Z10, U		ND	Z10, U	
1,2-Dichlorobenzene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
1,2-Diphenylhydrazine	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
1,3-Dichlorobenzene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
1,4-Dichlorobenzene	ND	M5, U	J	ND	M5, U	J				ND	Z10, U		ND	Z10, U	
2,4,5-Trichlorophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2,4,6-Trichlorophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2,4-Dichlorophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2,4-Dimethylphenol	7100		J	ND	U					ND	Z10, U		ND	Z10, U	
2,4-Dinitrophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2,4-Dinitrotoluene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2,6-Dinitrotoluene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Chloronaphthalene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Chlorophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Methylnaphthalene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Methylphenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Nitroaniline	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
2-Nitrophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
3,3´-Dichlorobenzidine	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
3-Nitroaniline	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4,6-Dinitro-2-methylphenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Bromophenyl-phenylether	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Chloro-3-methylphenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Chloroaniline	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Chlorophenyl-phenylether	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Methylphenol, 3-Methylphenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Nitroaniline	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
4-Nitrophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Acenaphthene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Acenaphthylene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Aniline	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Anthracene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benz(a)anthracene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzidine	ND	E3, U	J	ND	U	J				ND	Z10, U		ND	Z10, U	
Benzo[a]pyrene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzo[b]fluoranthene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzo[g,h,i]perylene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzo[k]fluoranthene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzoic Acid	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Benzyl alcohol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
bis(2-Chloroethoxy)methane	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Bis(2-Chloroethyl)ether	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Bis(2-chloroisopropyl)ether	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	

SVOC DATA															
Field Sample ID	PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03		
Lab Sample ID	09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03		
Matrix	Solid			Solid			Water			Water			Water		
Sample Date	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ
Bis(2-Ethylhexyl)phthalate	2600	E3	J	ND	U					ND	Z10, U		ND	Z10, U	
Butylbenzylphthalate	ND	E3, U	R	ND	U	R				ND	Z10, U		ND	Z10, U	
Carbazole	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Chrysene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Dibenz[a,h]anthracene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Dibenzofuran	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Diethylphthalate	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Dimethylphthalate	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Di-n-butylphthalate	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Di-n-octylphthalate	ND	E3, U	J	ND	U	J				ND	Z10, U		ND	Z10, U	
Fluoranthene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Fluorene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Hexachlorobenzene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Hexachlorobutadiene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Hexachlorocyclopentadiene	ND	V6, U	J	ND	V6, U	J				ND	Z10, U		ND	Z10, U	
Hexachloroethane	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Indeno[1,2,3-cd]pyrene	ND	E3, U	J	ND	U					ND	Z10, U		ND	Z10, U	
Isophorone	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Naphthalene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Nitrobenzene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
N-Nitrosodimethylamine	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
N-Nitroso-di-n-propylamine	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
N-Nitrosodiphenylamine	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Pentachlorophenol	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Phenanthrene	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	
Phenol	1800		J	ND	U					ND	Z10, U		ND	Z10, U	
Pyrene	ND	E3, U	J	ND	U	J				ND	Z10, U		ND	Z10, U	
Pyridine	ND	U	J	ND	U					ND	Z10, U		ND	Z10, U	

METALS, CHEM DATA															
Field Sample ID	PI-S-1			PI-S-2			PI-W-01			PI-W-02			PI-W-03		
Lab Sample ID	09H0911-01			09H0911-02			09H0966-01			09H0966-02			09H0966-03		
Matrix	Solid			Solid			Water			Water			Water		
Sample Date	08/26/2009 14:35:00			08/26/2009 15:15:00			08/27/2009 00:00:00			08/27/2009 00:00:00			08/27/2009 00:00:00		
Units	mg/kg	Lab Q	DVQ	mg/kg	Lab Q	DVQ	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ	mg/l	Lab Q	DVQ
Aluminum	23000			150000			0.035			0.44			0.43		
Antimony	ND			ND			0.0057			ND			ND		
Arsenic	ND			ND			ND			ND			ND		
Barium	150			470			ND			0.12			0.12		
Beryllium	ND			ND			ND			ND			ND		
Cadmium	2.9	B2		ND			ND			0.00068			0.00072		
Calcium	11000			22000	B2		ND			18			15		
Chromium	71			290			ND			ND			ND		
Cobalt	ND			ND			ND			ND			ND		
Copper	410	B2		280			0.0026			0.0022			0.0020		
Iron	19000			23000	B2		ND			ND			ND		
Lead	75			ND			ND			ND			ND		
Magnesium	820			2100			ND			7.5			6.4		
Manganese	890			4600			ND			0.013			0.016		
Nickel	53			ND			ND			ND			ND		
Potassium	230			780			ND			9.8			8.2		
Selenium	53			ND			ND			ND			ND		
Silver	ND			ND			ND			ND			ND		
Sodium	ND			ND			ND			27			23		
Thallium	ND			ND			ND			ND			ND		
Vanadium	8.1			ND			ND			ND			ND		
Zinc	420			500			ND			ND			ND		
Mercury	0.37	D	J	ND	D		ND			ND			ND		
Hexavalent Chromium															
pH	7.0			6.7			6.8	H6	J	7.0	H6	J	7.4	H6	J
% Solids	21.55			1.93											
Reactive Cyanide	ND			ND			ND			ND			ND		
Reactive Sulfide	42		J	26		J	ND		J	54		J	48	J	

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APPENDIX D

COMPLETE LAB DATA PACKAGE

See attached electronic CD

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